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**A REFERRER-CONTROLLED SYSTEM FOR TRANSFERRING AN INBOUND
COMMUNICATION TO ONE OF A PLURALITY OF FINANCIAL ASSISTANCE
PROVIDERS**

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I. TECHNICAL FIELD OF THE INVENTION

The present invention pertains to an electrical digital computer machine and a data processing system, methods of making and for using the machine, products produced thereby, as well as data structures and articles of manufacture pertaining thereto, and all
10 necessary intermediates of that which is discussed herein, all in the field of computerized aspects of card crediting to mortgages and the like. More particularly, this invention relates to a digital electrical data processing system having particular utility in financial fields related hereto. Still more particularly, the present invention pertains to call referral, as in the case of a calling debtor who is referred by the lender to a credit counseling agency, along with
15 automated generation of related documentation, inter-computer communications, and networking.

II. BACKGROUND OF THE INVENTION

Prior to the present invention, the technology of referring a debtor to a credit-counseling agency or other financial assistance provider could not be considered robust.
20 The generally excepted method for lenders (creditors) to refer consumers (debtors) to credit counseling agencies was to (a) tell them to their local yellow pages or (b) tell them to call one of two toll-free telephone numbers supported by the National Foundation for Credit Counseling (NFCC) or the Association of Independent Consumer Credit Counseling Agencies (AICCCA). The prior method of making referrals was a one-to-one approach that
25 utilized only existing telephones. In some cases individual or multiple credit counseling agencies would establish relationships with creditors who in turn would make referrals directly to that or those agencies. In some cases credit counseling agencies would produce manual or computer reports outlining which of the creditors customer(s) called the agency or agencies. In most cases these reports were compiled after a predefined period often 30 to 60 days later.
30 Where a creditor has multiple relationships and receives multiple reports then the data from each report has to be merged into a single summary report by the creditor requiring additional time and expense.

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There is no known incidence of automated referral of a debtor to an intermediary or a second such referral from the intermediary to the financial assistance center, such as a credit agency. Thus, there was no known capturing of a referrer or lender identity, or caller or debtor identity, by say the intermediary for use in, say, tracking, reporting, or feedback to any of the parties involved. Nor would there be any automated referral criteria for selecting a financial assistance center (e.g., credit counseling agency, other lender, etc.), say, by computer logic that applies referral criteria to the call. Lenders would have little idea how the credit counseling agencies fared, and the agencies would have no idea how they fared as compared with other agencies.

In sum, the industry has worked long and hard to collect on debts, and there is a plethora of lenders, troubled debt, and financial assistance centers, yet the known prior art has shortcomings that have left many inadequately addressed needs.

A. Objects and Advantages

In view of the foregoing, an object of the invention for which a patent is sought is improve over or overcoming some or all of the drawbacks indicated herein.

It is an object of the present invention to provide a computer system linked to call referral activity from debtors to lenders, e.g., by way of an intermediary, to financial assistance centers.

It is another object of the present invention to provide a computer system to select which of a plurality of financial assistance centers is suitable, based on lender-specified criteria, for referral of particular calls.

It is yet another object of the present invention to provide a computer system to capture debtor, and preferably lender, identities and/or other data (e.g., by ANI, DINS, IVR, telephony,) for referral and feedback, reporting, management, and comparative purposes.

It is still another object of the present invention to provide a computer system to communicate call referral reports, in real or near real time, to a secure global network site, such as an Internet web site.

It is an additional object of the present invention to provide a computer system to trigger call routing by defaults, time of day, location of caller, quantity (e.g., percent of calls placed to a center, prior communication between a particular caller and center, etc.

It is also an object of the present invention to provide a computer system to generate call referral reports by time of day, day of week, state of debtor, as well as an

analysis of uncompleted (e.g., hang ups) calls, comparison with other centers – especially those used by a common lender.

These and other objects and advantages of this invention will become apparent from a consideration of the figures and ensuing description in contrast to the state of the art before the present invention.

B. Summary of the Invention

These and the other objects of the present invention, as apparent from the specification as a whole, are carried out by providing a machine, manufacture, process, and improvement thereof in which user defined criteria is electronically and digitally stored in a custom database which processes and modifies electrical and digital signals representing data so as to overcome the aforementioned disadvantages of prior referral management policies or systems. More particularly, the invention involves, a computerized system for the management, tracking, and reporting of referrals make from one company, individual, or entity to another company, individual, or entity. More particularly, the present invention relates to a process that utilizes telecommunications technology, computer technology, database technology, web-based reporting application technology to manage, track, and report results based on the user defined criteria.

More particularly, this invention relates to an automated computer system that allows referrers to define referral criteria, manage their referral process, track referrals and types, and number of referrals, and receive referral results in pre-defined or custom reports in real time or near-real time. One particularly application for this invention is in the credit counseling industry where issuers of unsecured debt such as credit cards might be interested in referring financially stressed customers to credit counseling agencies for assistance in meeting their financial obligations.

Even more particularly, the present invention relates to an improved digital electrical computer-based system configured to address the foregoing objects, including a machine (programmed computer), methods for making and using it, products produced by the method, data structures, and necessary intermediates, collectively referenced herein after as the method (for the sake of brevity).

Accordingly the invention can be exemplified as a computer-aided method such as that for a referrer-controlled method for transferring an inbound communication to one of a plurality of financial assistance providers, the method including the steps of: receiving an

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the step of: providing call activity reporting updated no less than daily at a secure web site.

In any of the embodiments, the invention can be carried out by further including the step of: providing a web site demonstration of said method.

5 In any of the embodiments, the step of selecting can include: applying as said criteria a call routing triggered by a quantity of prior calls respectively placed to the financial assistance centers.

In any of the embodiments, the step of selecting can include: applying as said criteria a call routing triggered by a detection of a debtor who has previously been referred to one of the financial assistance centers.

10 In any of the embodiments, the step of selecting can include: applying as said criteria a call routing triggered by time of day.

In any of the embodiments, the step of selecting can include: applying as said criteria a call routing triggered by location of the debtor.

15 In any of the embodiments, the step of selecting can include: applying as said criteria a call routing triggered by time of day, location of the debtor, and a quantity of prior calls respectively placed to the financial assistance centers.

In any of the embodiments, the step of selecting can include: applying as said criteria a default call routing triggered by a failure to make a first connection to one of the financial assistance centers.

20 In any of the embodiments, the invention can be carried out by further including the steps of: storing call referral information including number of calls and call duration data for each said financial assistance center; and generating a report of said call referral information.

25 In any of the embodiments, the invention can be carried out by further including the steps of: storing call referral information including caller hang up data; and generating a report of said call referral information.

In any of the embodiments, the invention can be carried out by further including the steps of: storing call referral information including attempted but uncompleted call connecting; and generating a report of said call referral information.

30 In any of the embodiments, the invention can be carried out by generating a call referral report by time period for each said financial assistance center.

In any of the embodiments, the invention can be carried out by further including

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the step of: including in the report an analysis of call referral activity by time of day.

In any of the embodiments, the invention can be carried out by including in the report an analysis of call referral activity by day of week.

5 In any of the embodiments, the invention can be carried out by including in the report an analysis of call referral activity by state of debtor.

In any of the embodiments, the invention can be carried out by including in the report an analysis of uncompleted calls.

In any of the embodiments, the invention can be carried out by generating a call referral report including a comparison of said financial assistance centers.

10 In any of the embodiments, the step of generating includes generating the call referral report including the comparison of said financial assistance centers by a respective one of the lenders.

In any of the embodiments, the invention can be carried out by using IVR to associate the telephone number with debtor information.

15 In any of the embodiments, the invention can be carried out as a report (product) produced by a method.

In any of the embodiments, the invention can be carried out as a computer system programmed to implement a method for referring a telephone communication to one of a plurality of financial assistance providers based on lender criteria,
20 the computer system including: a digital electrical computer having a processor, the processor electrically connected to store and receive electrical signals at a memory device, to receive input electrical signals corresponding to input information from an input device, to convert output electrical signals into output information at an output device, the processor programmed to control the digital electrical computer to receive the input electrical signals and
25 to process the input electrical signals to produce the output electrical signals in storing telephone numbers for a plurality of financial assistance providers in memory accessible by said digital electrical computer, storing lender-provided criteria for selecting one of the financial assistance providers, identifying a debtor in response to a telephone communication, and selecting one of the financial assistance providers by accessing the criteria, applying the
30 criteria, and accessing one of the stored telephone numbers to connect the debtor to the one of the stored telephone numbers; especially as further including a telephone controlled by said digital electrical computer to connect the debtor by telephone to the one of the stored

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determine if this consumer called before and route them back to the correct (previous) agency.

Answer the call – time stamp. This step to mark the beginning of the call.

Prompt the caller for digits – credit card information – for routing back to the lender to identify the caller and track what became of the caller.

Authenticate the collected digits – i.e., credit card number.

Play a "Thank-You" message and place the caller on "hold."

Determine if consumer has called before: Previous caller; New caller; Default.

Perform routing table lookup – Using the DNIS and ANI information query the routing tables for an outbound number to agency.

Seize an outbound telephone channel (line).

Get the next outbound telephone number.

Dial the outbound number.

Was the call answered in 4 rings (valuable for report information); if not, check if there is another outbound number – shift from primary agency to secondary agency.

Connect caller to agency.

Wait for hang-up or call time-out – Monitor both sides of the conversation for a hang-up. If hang-up is detected, clean up resources.

Generate updated reports every two minutes, posted to a secure web site.

The Referral Management System (RMS) is not limited to just the credit counseling world.

A Receiver (someone who receives a referral) can be any of the following:

1. consumer credit counseling agency
2. home equity lender
3. debt consolidation or loan refiner
4. bill paying service (automated or not)
5. commercial lender
6. financial planner

or more particularly, an apparatus of the same.

A Referrer (someone who directs a call for the referral) can be any of the following:

1. creditor
2. employee assistance program (EAP)
3. professional employer organization (PEO)
4. membership services organization
5. labor unions
6. affinity groups
7. clubs
8. credit unions

or more particularly, an apparatus of the same.

While the foregoing is a reasonable summary, it should be understood that the scope of the invention is defined by the claims subsequent hereto, and that variations on the preferred embodiment are intended to be embraced therein, particularly call referral without an intermediary, as for example by the lender itself directly connecting callers to credit counseling or other financial assistance agencies. Further detail is provided in the drawings and detailed discussion set out below.

C. Brief Description of the Drawings

Fig. 1 is an illustration of an embodiment of the present invention.

Fig. 2 is an illustration of an embodiment an IVR System diagram in accordance with the present invention.

Fig. 3 is an illustration of an embodiment an IVR High Level diagram in accordance with the present invention.

Fig. 4 is an illustration of an embodiment an IVR Database Schema in accordance with the present invention.

Fig. 5 is an illustration of an embodiment a main screen in accordance with the present invention.

Fig. 6 is an illustration of an embodiment a members screen in accordance with the present invention.

Free number, by the bank.

For a particular embodiment, consideration should be given to T1 interfaces, commercial software, custom software, and hardware products and other features; major factors include scalability, reliability, compatibility, functionality, available support, and short and long term cost. T1 trunking options from the Tier-1 Long Distance Exchange Carriers (LEC's) can be obtained by contracts with the LEC's. Equipment location can be such as SkyNetWeb, a co-location facility in Baltimore, MD. which provides the following:

1. Locked Cabinet (7' X 30" X 19")
2. Backup Power Generators
3. 24/7 Access to the equipment
4. Internet Access
5. Public Network Access

A suitable IVR platform can be obtained from LCG, and database products, such as those from Oracle, Sybase, and Microsoft, can be considered for a particular application. Sybase can be chosen.

Hardware used for the RMS can include T1 interface boards (Dialogic, and BrookTrout), RAID options, memory, processing speed requirements, and Backup & Recovery options. Dialogic can be used, and RAID V can be chosen for the disk array to provide redundancy; XEON processors can be used for potential expansion of the System 1 with 512K of RAM.

A toll-free provider can be considered for the best cost effective plan for the particular embodiment, considering per minute cost, minimum monthly requirements, and length of contract. Spring Valley (a subsidiary of WorldCom) can be used.

Hardware can be comprised of the following RMS:

Category	Description	Qty.
Motherboard	Intel C440GX Dual-Xeon	1
CPU	Intel Pentium III Xeon 550MHz w/ 1MB cache	2
Memory	256MB Synchronous DRAM	2
Boot Drive	Seagate Medalist 6.4GB Ultra ATA/66	2
Hard Drives	9.1GB IBM Ultra2-SCSI SCA LVD 80pin SCA 10,000rpm	4
RAID	PCI - Adaptec:AAA-131U2, 1 ch., Ultra2-SCSI, 64MB	1

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Controller	Cache	
CDROM	IDE 48X CDROM	1
OS	Windows NT Server 4.0, with 5 client licenses	1
	Intel Cabrillo-C Full Tower with 3 redundant 400W Power	
Case	Supplies	1
Pedestal Kit	Pedestal Kit for Cabrillo-C chassis	1
Floppy Drive	IDE 1.44MB 3.5"	1
Keyboard	Windows PS2 104 Key	1
Mouse	Microsoft PS2 Intellimouse	1
Monitor	Viewsonic Optquest Q51 15" .28dp	1
	US Robotics External (56k w/voice) & Blaster External	
Modem	(56K w/voice)	2
NIC	ISA - 3COM 10/100MB Ethernet Card	1
Backup	Seagate Scorpion 12/24 SCSI2 Tape Backup	1
Backup	Seagate Backup Exec for Windows NT Version 7.3 Multi-	
Software	Server	1
Warranty		
Maintenance	3 yr Onsite, pageable, 7/24, 4 hour response	1
	APC Smart UPS 700Net (w/ powerchute software and	
UPS	cable)	1
Remote	Intel PCI Card/Modem (Emergency Management Card)	
Management	with Software	1
CSU	External T1 CSU's (one spare)	3
Database	Sybase Adaptive Server Anywhere (20 concurrent	
Management license)		1
IVR Platform	VBVoice - 96 channel Professional Edition	1
T1 Boards	Dialogic SC/240 Single T1 Boards	3

The trunk interface boards are Dialogic SC/240 T1 Interface boards. The IVR software was built using the Professional Version of Pronexus's VBVoice Toolkit. This software interfaces with the Dialogic T1 interface boards to answer the call, collect the ANI and DNIS information, prompt the Customer, initiate the Outbound Number database lookup, dial the Outbound Number and bridge the call between the Inbound Caller and the Outbound

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destination.

VBVoice is purchased based on number of channels that it will support. This support can always be upgraded but currently can support a maximum of ten T1's, e.g., the following version of VBVoice: VB Voice Professional 4.1 - 96 Channels (supports 4 T1's).

- 5 This software support of four T1 circuits will allow for expansion of two more T1's without upgrading the VBVoice software

The IVR Server has the following available 4 PCI slots for T1's. In the present implementation, there are three single T1 PCI boards. Two were immediately configured in the system and one is a spare. The initial capacity will be as follows: T1 Trunks – Two (Two PCI
10 boards – One T1 per board): This allows for 24 simultaneous completed calls to the CCA's through the system. Initial call volume capacity is 20K calls/month (non-blocking).

Assumed the following average call criteria:

1. 24 Business Days per Month
2. 12 Business Hours per Day
- 15 3. 7 Minutes per Call

With the above call criteria, the IVR system will average approximately 1 call per minute with a 20K calls/month load on the system.

The Referral Management System 1 (RMS) performs criteria-based call routing. A caller dials a nationwide toll-free number that enters into the RMS via PSTN T1
20 audio trunks. Data including originating number (ANI), and called number (DNIS) are sent in over the PSTN and are collected by the RMS system. From this data, the day of week, time of day, and geographic region are determined and are utilized in a routing table (RT) lookup. The caller is presented with a recorded greeting and a request to enter a credit card number (if this prompt is enabled), which is then captured by the RMS. If no number is entered or the
25 number is determined to be an invalid credit card number, the caller is prompted again. With or without data from the first and second try, a recorded message is played and the transaction proceeds. A routing database lookup locates one main outbound number (OBN) and one or two default outbound numbers to dial depending on the routing model assigned to the toll-free called number (DNIS). The provided routing models are:

- 30 1. **Default** – One or two numbers assigned to a call if a DB lookup fails or primary call fails.
2. **Statistical** – Routing based on percentage of calls going to two or more

agencies.

3. **Time & Location** – Routing based on where the call originated from (ANI).
4. **Hybrid** – Combination of the Statistical and Time & Location Models.

The RMS places the customer "on-hold" and dials the OBN, and then connects the Customer or caller once an answer is detected. If a busy signal or no answer (defined by a configurable number of rings) is encountered, the call is re-routed to a default OBN based on RT specifications.

The RMS will continue to monitor the call until a hang-up condition is detected. It will then database the total length of the call. The RMS stores the detailed data on each call into a database record which is sent to the PEREGRIN Web Server via a push process. This push process logs its activity and occurs at a configurable rate (e.g., every two minutes).

The following RMS requirements utilized in the development of the System 1.

A. IVR Application Requirements

1. Shall answer phone call and start timer.
2. Shall collect and/or database:
 3. ANI Collected (Y or N)
 4. Originating Number (ANI)
 5. State call originated from (2 Digit)
 6. Start Date of Call (DD/MM/YY)
 7. Start Time of Call (HH:MM:SS)
 8. End Time of Call (HH:MM:SS)
 9. Length of Call (HH:MM:SS)
 10. Called Number (DNIS)
 11. Customer (i.e., caller) Entered Digits (16 max.)
 12. Criteria Cell Matched
 13. Number Call was attempted to...
 14. Number Call was completed to...
 15. Completion code (TRUE, FALSE)
 16. Non-complete reason (busy, no answer, line failure)
17. Shall prompt Customer, if enabled, for a 13-16 digit number terminated by a pound sign and shall log an event for digit time outs. Shall be able to disable Customer prompting for digits for a given DNIS

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1. The first of these is the fact that the
 2. of the system is not a simple one.
 3. of the system is not a simple one.
 4. of the system is not a simple one.
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 7. of the system is not a simple one.
 8. of the system is not a simple one.
 9. of the system is not a simple one.
 10. of the system is not a simple one.

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answered.

59. Shall be able to modify or add custom greetings for the first prompt without re-compiling the system code.

B. Database Requirements

1. Shall be encrypted and written to a file every 24 hours.
2. Shall push the IVR table data out the network connection at a configurable interval.
3. Shall specify a Routing Model for all Inbound Numbers
4. Shall have three basic Routing Models and one Default. The three basic Routing Models are:
 5. Statistical
 6. Time Location
 7. Hybrid
8. Routing Models shall key off the DNIS information
9. Shall provide three types of Lookups:
10. Previous Caller: For valid CCN's, shall determine if Customer has called before. If customer has called before and was connected to a CCA, then the previously dialed Outbound Number will be returned. If the Customer called before but was never connected to an Outbound Number then the Customer will be treated like a new caller and a New Caller Lookup will be performed.
11. New Caller: If the Customer has not called before or an invalid CCN was entered or the Customer has called before but was not connected then the Routing Model specified for the DNIS will be used to lookup one Outbound Number. Regardless of the specified Routing Model a Default Routing Model will always return two Outbound Numbers. When a Routing Model is not specified for a particular DNIS the Default Routing Model will be used.
12. Default: For each DNIS two CCA numbers will be specified, one primary and one secondary. This lookup will always return two outbound numbers.
13. Shall handle the following Routing scenarios:

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Call Scenario

Lookup Description

- | | | |
|---|---|---|
| 1 | DNIS not Collected | Go to Routing-Decision table, key off "not received" and use the specified Routing Model. |
| 2 | Invalid DNIS Collected (DNIS collected is not defined in our table) | Go to Routing-Decision table, key off "invalid" and use the specified Routing Model. |
| 3 | DNIS Collected, ANI not Collected | Go to Routing-Decision table, key off the received "DNIS" and use the specified Routing Model to get the first Outbound Number to dial. (This creates a unique routing issue if the TimeLocation Model was specified. There should be logic inside the TimeLocation Model to handle this scenario.) The IVR will use the Default Routing Model to lookup two more Outbound Numbers. A maximum of three Outbound Numbers will be tried for this Customer. |
| 4 | Both DNIS and ANI are Collected | Go to Routing-Decision table, key off the received "DNIS" and use specified Routing Model and use it to lookup one specific Outbound Number. Attempt to dial this CCA. The IVR will use the Default Model to lookup two default Outbound Numbers. A maximum of three Outbound Numbers will be tried for this Customer. |
| 5 | Bank requests:

XX% of the time call CCA #1

XX% of the time call CCA #2

XX% of the time call CCA #n

Primary Default

Secondary Default | <p>Statistical Model: For each Inbound Number the bank will specify a certain number of Outbound Numbers (CCA's) with corresponding percentages. The total percentages must add up to 100%. If only one Outbound Number is specified then the percentage must be 100%. The model will be used to determine the first number to attempt.</p> <p>DefaultModel: The bank will also specify two default number if the first attempt fails.</p> |

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Bank requests:

State1 and TimePeriod1 to

CCA #1

State1 and TimePeriod4 to

CCA #2

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StateN and TimePeriod1 to

CCA #P

StateN and TimePeriod4 to

CCA #Q

Primary Default

Secondary Default

Time Location Model: For each Inbound Number the bank will specify calls from a certain state and at a certain time period to be routed to a particular CCA. The Time Periods will be mutually exclusive. The number of Time Periods will be limited to four for each state. The model will be used to determine the first number to attempt.

DefaultModel: The bank will also specify two default number if the first attempt fails.

Bank requests:

State1 and TimePeriod1 to

CCA #1

7

State2 and TimePeriod2

- 50% to CCA#2

- 50% to 10 other CCA's

Hybrid Model: This model combines the Statistical and TimeLocation Models into one Model so when a Customer calls from a particular location during a particular time range we can statistically route calls to the appropriate CCA. In addition we can route differently based on the day of the week. In particular we can discern between day of the week, weekends, and holidays.

Default Model: The bank will also specify two default number if the first attempt fails.

5 Overall system design and technical management for the RMS system includes the IVR System, Database Schema development, custom IVR application development, error recovery utilizing paging technologies, installation and testing, and future expansion and support plans.

Fig. 1 is an illustration of an embodiment of the present invention. Fig. 1 shows a customer 2 or caller connected by a channel to PTSN 4, which is centrally connected to a

CCA 6, a Remote Monitoring Station 8 allows the referring bank to listen in on calls which are being transferred or sent to agencies, which may require a monitoring statement to be made when the call is be transferred advising the consumer that the call may be monitored, and Tier 1 Provider 10 of channels (in-bound and outbound audio lines), which connect via Dual Processor Server 12. Dual Processor Server 12 includes Trunk Interface Boards 14, which link to PSTN 4 via a Remote Maintenance System 16 is monitoring software which detects the condition or falure of key aspects of the IVR, such as temperature of the unit, hard drives working, etc., and sends a page to personnel if warning conditions occur. It also allows remote rebooting of the system, IVR 18 Database Management System 20, with Custom Software 20 is all of the steps detailed beginning with step 1., Collect ANI and DNIS at 30. This softweare analyzes the call, gathers information, presents it for routing and sends the call to the designated agency. Dual Processor Server 12 communicates with Disk Array 24, makes a tape back up 26, and interfaces with a courier system such as UPS System 28.

As to error recovery, the following paging requirements are for the RMS System 1 to recover from system faults and generate pages:

1. Inbound T1 Fault
2. Outbound T1 Fault
3. Database Fault
4. WebServer Not Accessible
5. Switched to Backup Power

There should be a continuous monitoring capability to detect problems with the RMS server such as temperature thresholds exceeded, memory errors, disk errors, and Operating System malfunctions.

With regard to the IVR subsystem, access to the Internet can be provided via a port on SkyNetWeb's switched Ethernet LAN. The access can be through MCI/Worldcom's UUNET. Thirty-two (32) IP addresses can be provided and 50 GB of data transfer per month can be supported

For public network access, 24 in-bound audio channels (telephone lines or the like) can be provided by a Spring Valley/ MCI WorldCom Dedicated T1 Trunk. There also can be 24 out-bound audio channels, which can be provided by a MCI WorldCom Local T1. Additional in-bound and out-bound audio channels can be provided by a Spring Valley/ MCI WorldCom Dedicated T1 Trunk.

Fig. 2 is an illustration of an embodiment an IVR System diagram in

accordance with the present invention. The IVR application for the RMS 1 and the IVR Sub-System custom software 20 has the following description.

1. **Collect ANI and DNIS at 30;**
2. **Answer Call at 32:** Time stamp this step to mark the beginning of the call.
3. **Prompt Customer for Digits at 34:** After answering the Call, prompt Customer for digits using **Prompt 1**. After the first digit timeout prompt Customer for digits using **Prompt 2** and after the first authentication failure prompt the Customer for digits using **Prompt 3**.
4. **Wait for Customer to enter a DTMF digit at 36:** The first time the Customer fails to enter a digit, log an event, and re-prompt the Customer for digits using **Prompt 2**. The second time the Customer fails to enter a digit, log and event, and prompt the Customer using **Prompt 4**. The Customer has maximum amount of time to enter a digit and this will be specified by the digit timeout parameter. This parameter will be dynamically re-configurable.
5. **Collect a DTMF digit at 38.**
6. **Validate the Collected digits at 40:** Proceed to step 7 and authenticate the collected digits if any of the following cases are **TRUE**:
 - If the digit is a pound (#) at 40
 - If the digit is a star (*) at 40
 - If the 17th digit is NOT a pound (#) at 40
 - If NONE of the above cases are TRUE then proceed to step 36 and wait for another digit.
7. **Authenticate collected digits at 42:** Do the following checks in the following order:
 - Invalid digits (star *)
 - Minimum number of digits required
 - Maximum number of digits allowed
 - Subject the collected string of digits (minus the pound (#) sign) to provided authentication algorithm.

- The first time any of the above checks **FAIL**, log an event and re-prompt the Customer for digits using **Prompt 3**.

The second time any of the above checks **FAIL**, log an event and prompt the Customer using **Prompt 6**.

8. **Play a "Thank –you Message at 44:** Depending on how a Customer gets to this step one of three different prompts will be played.
9. **Play a "Thank –you Message at 46:** Depending on how a Customer gets to this step one of three different prompts will be played.
10. **Determine if Customer called before at 48:** Only when authentication is successful, perform a database lookup into the Customer Tables to determine if the current Customer has called in the past. When doing this search in the database we should only have to search calls which have authenticated properly. This should speed up this query. This step is performed in an effort to reconnect past Customers to the same Outbound Number every time, provided they always enter their account number properly.
11. **Perform Routing Table Lookup at 50:** Using the DNIS and ANI information query the routing tables for an Outbound Number.
12. **Put Customer on HOLD at 52:** Customer must be put on **HOLD** while the **IVR** system dials the Outbound Number. Time stamp this step so we can monitor how long we keep a Customer on **HOLD**.
13. **Play Music or a Message at 54:** While the Customer is on **HOLD** play music or use **Prompt 9**.
14. **Seize an Outbound Channel at 56:** If this succeeds proceed to step 14, if it fails, log an event and play the Customer message using **Prompt 8**.
15. **Get the Next Outbound Number at 58:** Get the next Outbound number to dial. If the Customer has called before then there will only be one number on this list. If this is a first time caller and the routing table lookup was successful then there will be 3 numbers on this list (1 from routing tables and 2 defaults). If this is a first time caller and the routing table lookup failed, then there will only be 2 numbers on this list (the 2

defaults).

16. **Dial the Outbound Number** at 60: Send DTMF tones down the outbound trunk corresponding to the Outbound number. (Dial the CCA)
17. **Was Call Answered within 4 Rings** at 62: If it was then proceed to step 19
18. **Are there any more Outbound Numbers** at 64: If the Called party fails to answer within the first 4 rings, for any reason, then we end up here. If there are more Outbound numbers to dial goto step 14, if not, log an event and Play an apology message specified by **Prompt 7**.
19. **Play "Apology" Message** at 66: Depending on how a Customer gets to this step one of two different prompts will be played
20. **Connect Customer to CCA** at 68: Time stamp this step and calculate the amount of time it took the **IVR** system to connect the Customer to an appropriate destination.
21. **Wait for Hang-up or Call Time-Out** at 70: Monitor both sides of the conversation for a hang-up. If hang-up is detected, clean up resources (trunks, etc.) and time stamp this step so the total length of call can be calculated. If hang-up is **NOT** detected before the call duration reaches the maximum allowed, log an event, time stamp and clean up resources (hang-up).

Turning now to the IVR Sub-System Database 20 (Fig.1), the Sybase product, Adaptive Server Anywhere can provide database Management for the RMS. A Push application was developed to transfer database content required by the Web Sub-System over the network connecting the two sub-systems. The timing of this push is controlled by a setting in a configuration (setting indicates the number of minutes between pushes). For example, if set to "2" will push the data every two minutes. To make the push more efficient, only the new records since the last push are sent to the Web Server.

The IVR Sub-System of Data Management System 20 interfaces with the Web Sub-System shown in Fig. 3. Components include IVR Database 72, Web database 74, which communicates to a global network such as the Internet World Wide Web 76. Benefits Include:

1. Protects integrity of IVR Database

2. Redundancy
3. Optimized Web Database for Web Reporting
4. Removes reliance of Web Server on IVR Database (split sisters)

Database Schema is shown in Fig. 4 which is the routing model and data for each referrers' inbound lines. With regard to the Website (e.g., for access to reports), it is advisable to utilize a browser, such as Internet Explorer 4.0 or higher, or Netscape Navigator 4.0 or higher, etc., preferably with 128-bit encryption (SSL).

Internet Explorer

1. Select Help on the menu bar
2. Choose About Internet Explorer from the drop down menu
3. The number in the "Cipher Strength" field is the encryption strength

Netscape

1. Select Help on the menu bar
2. Choose About Navigator or About Communicator from the drop down menu
3. Scroll down and look to the left for the statement that begins, "This version supports U.S. Security with RSA Public Key Cryptography" That indicates a 128-bit encryption level.

Preferably the invention is carried out with a secure web site, for example, using Secured Sockets Layer (SSL) for secure transmissions. SSL applies encryption between two communicating applications, such as the Referrer Computer and the System Internet server. When the Referrer Computer transmits data over the Internet, the data is encrypted or "scrambled" at the sending end and then decrypted or "unscrambled" at the receiving end. Encryption is a technology that allows secure transmittal of information along the Internet by encoding the transmitted data using a mathematical formula that scrambles it. Without a corresponding "decoder," the transmission would look like nonsense text and would be unusable. It can be used with many applications, including electronic commerce (sending credit card numbers for orders or transmitting account information), e-mail messages and sensitive documents. The System uses digital signatures and 128-bit encryption to identify users and to ensure that information exchanged online is safe from interception and alteration.

Additionally, the Web Site requires a unique User ID and Password. Thereafter,

each time a Referrer Computer is used in a sign-on, the user's identity is confirmed by a series of authenticating steps. After authentication, a "cookie" is planted in the Referrer Computer system to identify the referrer Computer

5 Preferably the invention is carried out so that the browser must accept "cookies". A browser may be set to receive cookies automatically or to notify of cookies. Either way is acceptable. If the browser is set to notify, a user may receive a notice that the server wishes to set a cookie when the user accesses secure areas of the Web Site.

10 Put simply, a "cookie" is a small piece of information about a computer's identity. There are two kinds of cookies -- "persistent" and "transient." A persistent cookie, once installed, remains on the hard drive of a computer. Preferably a transient cookie is used, which is not permanently stored on the Receiver Computer hard drive and is not available to anyone other than the System. The cookie contains information that allows the System to maintain continuity from one page to another as the referrer Computer navigates the site and reports. All information is securely encrypted through the use of SSL as described above.

15 Accessing the Web Site is carried out in the usual manner of entering the correct Internet address the Referrer Computer's browser address bar and hitting "enter." At this point, the System Website security validates the IP address and approach. Once a main screen appears, the referrer Computer can be used to "bookmark" the page for future easy reference.

20 From the main screen in Fig. 5, a user of the Referrer Computer can choose:

Members 100 – a secure part of the Website, requiring a login id previously obtained from the System by using a CONTACT US button to obtain a login id. The user can access all reports by this means.

25 **Links and News 102** – links for both financial and industry purposes, and news that is pertinent to the industry. Use the CONTACT US button at the bottom of the page to suggest a link.

What we do 104 – all about the System for receivers and referrers. New visitors can enroll to become a receiver or referrer or view a tutorial by clicking on the links here.

30 **About us 106** – all about the System and its related team-as the enterprise grows.

As the user moves a mouse pointer over any of these items, a description of

the function appears to its right in the green area, replacing the verbiage there. At any time, anywhere in the site, the user can use a browser's "Back" button to return to a previous page. Or, click on the "nav" bar name to go right to that report or section. To go to the main page, Fig. 5, simply click on a HOME in the bottom left of any screen, or click on the System logo (in this case, Peregrin) in the upper right.

Turning now to using the embodiment of the present invention in connection with reporting, subsequent to the above-mentioned login, a user can move a mouse pointer over a MEMBERS button and click once. the user is then taken to a member login screen, Fig. 6. The user enters a User Name and password here. If the user has not enrolled, or forgotten a password, the user can click on the highlighted text below the login screen to send an email to the System automatically for assistance.

Once the user has entered a User Name and password, clicked on a SUBMIT button, and a summary for the login level appears. the user's login level will show referrals for a particular area of responsibility as defined by the user's administrator. the user's senior management may see all referrals by all departments within their areas of responsibility, while other department areas may see referrals from just their areas of responsibility. Some users who access reports frequently find it helpful to bookmark this page instead of the main page.

A login can be set to stay active for a fixed period of time, say, 30 minutes of inactivity, so if the user leaves the Referrer Computer for more than 30 minutes, the user will be automatically logged off the System. As long as the User is active within the time period, the user will not be automatically logged off, unless, of course, the user closes the browser.

A Member Summary Screen, Fig 7, is provided upon a successful login. This screen identifies the user and the location associated with the user. The user will be able to view reports for all referrals from this location. To come back to this summary at any time, simply click on a MEMBER SUMMARY button.

As to the Referrer reports, there are several buttons (options), such those illustrated on the left-hand navigation bar (navigation bar) of Fig. 7, DAILY REPORTS, 7 DAY REPORTS, 30 DAY REPORTS, AND YEAR REPORTS, which function identically for different time periods. MONTHLY or other periods could similarly be used.

DAILY REPORTS reflect the current day beginning at 12:00:01 AM of the day the user inquires. 7 DAY REPORTS reflect the last 7 days ending at 12:59:59 PM the day before the user inquires. 30 DAY REPORTS reflect the last 30 days ending at 12:59:59 PM the day

before the user inquires. YEAR REPORTS show the last 365 days ending at 12:59:59 PM the day before the user inquires. For specific date ranges, such as a calendar week , month, or year, use CUSTOM REPORTS.

Many of the higher-level reports include two powerful and useful buttons in the left most columns of Fig. 8 (in connection with Fig. 9). Click the DRILL DOWN button to get more information on any line that has a bold heading. For instance, from the monthly summary page Drill Down will take the user to a listing of each day's activity by receiver. Click on any **bold** entry from there to see a listing of unique callers on any one day. And Click on any **bold** entry from there to see callers with duplicate identification information. The user can learn more about drilldown reports below.

Click the COMPARE button to go to a sub-report listing comparative information on all referrers that the receiver uses. Examples:

When viewing a summary report, notice that call completion rates and talk time have decreased at one of the receivers. When the user clicks on the COMPARE button for that receiver, the user sees that the receiver now has two new referrers making referrals. This new referral volume could be affecting the service level the receiver has been providing to user, which may warrant investigation.

When the user clicks the COMPARE button for one receiver, the user may see that the Referrer makes up a majority of the referrals that this receiver is getting. Perhaps other referrers have not discovered the value this receiver can offer; perhaps other referrers have been in a similar referral relationship with this referrer before and have discovered it to be to their disadvantage to be dependent on one agency.

Whatever the reason, this information may warrant further investigation. Preferably referrer identities are not generally displayed, and volumes are shown as percentages of the total referrals to that receiver to maintain confidentiality of referrers. As a more particular example, consider YEARLY REPORTS.

The YEARLY REPORTS provide a snapshot of the user's Referring Institution, including referral data to all receivers in the last 365 days. The receiver name in level one can be clicked to visit the receiver's website, if there is one.

As always, click the browser's BACK button to return to the previous report, or click on a report name to go there directly.

Click on the DRILL DOWN button to proceed to level two, the next level of

detail. Here the user will see summary information for each of the previous 12 months for the receiver identified by clicking on a corresponding button. The date column in Level 2 is bold for every month in which there have been more than one referral made to this receiver.

Then, click on a bold month to go to Level 3 for a summary of referrals for the month to that receiver. There is one row for each day that there were referrals. Clicking on a bold date (Bold indicates that there was more than one referral made to that receiver that day) takes the user to level 4 where all referrals for that date are listed by Time of Call.

If any of the credit card numbers are bold in level 4 there are multiple records for that credit card number (even if the credit card number is shown as a 0), providing the user with the ability to drill down to level five.

Level five displays all matching records for the clicked card number.

Examples of YEARLY REPORTS are shown in Figs #-# . At level one, the date range is listed on top of the report. Click on the DRILL DOWN button for more detail on any receiver. At level two, the receiver name and date range are at the top of the report. There is one row for each calendar month. Months with multiple referrals are bold. Click on any Bold Month for detail by date of call. At level three, the receiver name and date range are at the top of report. There is one row for each date of referrals. Dates with multiple referrals are bold. Click on any Bold Dates for detail by caller's account number and origination. At level four, there is shown each card number entered for each call and the originating phone number for calls made to the receiver selected in level 1 for the day clicked in the previous level. Receiver name and date range are listed at the top of report. Records are sorted by time of day from most recent. There is one entry per unique identifier, i.e., credit card number. Multiple entries are Bold. (Click on Bold card numbers for more detail.) Zero is displayed if no card number was entered. At level five, in the case of multiple calls having the same card number, this report will show each of the calls made with that account number. Account number is listed at the top of the report. Originating phone number, time, date, and length of each call is listed.

Using COMPARE is a very powerful tool that permits a user to view other receivers being used by a referrer. Click on COMPARE next to the name of any receiver to see statistics such as those in Fig. 9, where the user will see its organization listed first, and all other referrers using that receiver will be listed (without identification) below that. This report enables easily comparison against other referrers at this agency, e.g., by:

1. Call completion rates

time of the month. Data is provided for each month with a drill down link on **bold** months to a daily breakdown. Currently summarizes all Peregrin activity; later will also summarize by login. See Fig. 8, Level 3, where the user may drilldown on any **Bold** entry by clicking on it to see referral distribution by day of the month.

Turning now to use of the STATE OF ORIGIN REPORTS feature, this menu option provides a report of frequency data on caller activity based on the state of origin. Data is provided for each state. Data is sorted by state. This report does not have drill-down functionality. Currently summarizes all activity; but can also summarize by login. See Fig. 9, Level Four.

Turning now to use of the STATE OF ORIGIN REPORTS feature, this menu option provides a report provides users with a summary of overall call completion rates across all receivers and referrers. The report also provides a percentage breakout on the causes for incomplete calls. Currently summarizes all activity; but can also summarize by login. See Fig. 9, Level Five.

An illustration of an embodiment a report screen for analysis is provided in Fig. 10, and a schematic view of the site reports is provided in Fig. 11.

Not shown on the Figs. is an accounting system, such as QuickBooks TM, which can operate on a computer of the intermediary, either independently or in connection to the System 1 of Fig. 1 to account for compensation for call referral, such as a flat fee for each call referral, the fee being paid, for example, by the financial assistance center receiving the call referral.

Turning now to the operational standards for the website, particularly the specifications and configurations of the web server, firewall server, and related software and hardware, consider first a general overview of the SQL database used to drive the website. The website maintains a simple but secure multi-server design. The firewall server, which protects the network from unauthorized access, is a Windows NT Server configured with Axent Raptor Software. The web server is another NT Server running Internet Information Server, Cold Fusion, and Microsoft SQL server.

with a routing table entry which redirects all requests to the intermediary's IP address (64.23.0.20), which has been assigned to the first network card in the

Firewall. A Raptor server redirects the request from the firewall to the web server through a port 80 connection. The web server does not have an external Internet IP address. The web server is connected to the Firewall server using an internal IP address range 9192.168.XXX.XXX). The only device that is exposed to the Internet is the Firewall server 116, as illustrated in Fig. 13.

The Firewall Server 116 can, for example, be as follows: LCG Server; Windows NT Product ID Number 26699-OEM-0044587-97975; Intel Pentium III, 600 Mhz Processor (single processor); 256 MB RAM; 2 X 6.4 GB Hard Drives operating in a RAID configuration; 3 X 10/100 Network Cards (Intel); Top Card – Connected to WAN with blue cable; Middle Card – Connected to internal network with RED cable; Bottom Card – Currently inactive; Dual-redundant power supplies; 15 inch Optiplex monitor; CD-Drive; Floppy Drive. And the software can be Axent Raptor – Version 5.5; Internet Explorer; CuteFTP; Windows NT Server 4.0; Service Pack 5; Raptor Mobile VPN Software.

The firewall server 116 is configured to block all unauthorized Internet traffic. The minimum required ports have been left open.

Inbound traffic on port	Will resolve to
80 (http)	Port 80 on the web server
443 (SSL)	Port 443 on the web server
Outbound traffic from the web server on port	Will be routed to the Internet from port
25 (SMTP)	25 on the Firewall

The firewall server 116 can be installed with 3 Network Interface Cards (NIC) configured as follows:

Card 1: External Internet Exposure
(Top Card) IP Address: 64.23.0.20

Card 2: Internal Network between the Firewall and Web servers

(Middle Card) IP Address: 192.168.1.1

Card 3: Inactive card (Could be used to configure another domain)

(Bottom Card) IP Address (10.1.1.1)

All web-based communication uses the TCP/IP protocol stack. The Raptor Firewall 116 can be configured to run as an NT service with automatic start-up. Upon restart, all Raptor services will automatically resume.

There are two physical drives in the server. Each drive has an 8.4.GB capacity. The drives are partitioned into three volumes (C, D, and E). All relevant data is currently being stored on the C partition. D and E are currently empty except for a CuteFTP application directory on E. CuteFTP was used to download various applications and updates to the network. It should not put network security at risk. Raptor Firewall does a very good job of disabling insecure NT services. The following services are currently running on the Firewall server.

Eventlog

Plug and Play

Raptor Firewall

Remote Procedure Call (RPC)

Spooler

TCP/IP NetBios Helper

Workstation

The WebServer 114 can, for example, be LCG Server; Windows NT Key 26699-OEM-0044587-97975; 2 X Intel Pentium III, 550 Mhz Processors (dual processor); 512 MB RAM; 3 X 9.1 GB SCSI Hard Drives operating in a RAID 5 configuration; 2 X 10/100 Network Cards (Intel); Dual-redundant power supplies; 15 inch Optiplex monitor (model no – VCDTS21487-3M); CD-Drive; and a Floppy Drive. Similarly, the software can be Windows NT Server 4.0, Service Pack 5; Internet Information Server 4; Cold Fusion Professional Server, Version 4.5; Microsoft SQL Server 7 (Dual Processor, Unlimited Internet Connector Licenses);

Web Trends Log Analyzer; Internet Explorer; and PC Anywhere Version 9.

The WebServer 114 can be configured to accept Internet requests, process results, and pass formatted result pages back to the Internet. The server 116 completes this task by using Internet Information Server as the core web server application, Microsoft SQL server 7 as the database engine, and Allaire Cold Fusion 4.5 as the middle-ware application to translate database content into properly formatted web pages.

When a client calls the 800 number in search of a CCA, the details of the phone call are recorded in the IVR database 20. Preferably in real time, but also doable is every 1-3 minutes, the IVR database pushes new call records to a Microsoft SQL 7 database on the WebServer 114. CCA and Creditor members then query the call record database to retrieve relevant information. Cold Fusion Application Server formats this information into HTML.

The WebServer 114 has two network cards that allow the server 114 to route data requests between the Web/Firewall network and the Web/IVR network. The network cards can be configured as follows:

Card 1: Web / Firewall Card
 IP Address: 192.168.1.2

Card 2: Web / IVR Card
 IP Address: 192.168.2.1

Microsoft IIS, Cold Fusion Server, SQL Server, PC Anywhere, and WebTrends have been configured to run as NT services with automatic start-up. Upon restart, all above-mentioned services will automatically resume.

The WebServer 114 has been installed with 3 X 9.1 GB hard drives operating in a RAID 5 array. This configuration serves as a first line of defense against system failure. All data is being maintained on three hard disks.

All data on the web server RAID array (drive G) is being backed up to tape each night.

There are 5 physical drives located in the server 114. The first two IDE drives are 4 GB in size. These drives are being used as boot drives. They are divided into two, GB

partitions (C and D). An NT based RAID mirror has been established between the drives to insure reliability. The IDE boot drives are not being backed up to tape.

The remaining three drives, 9.1 GB SCSI configured in a RAID 5 array with an Adaptec 64 MB RAID adapter card, work together to create the G partition. This partition contains all data, cold fusion application files, and html files. Most program directories are also stored in this directory. This entire directory is being backed up to tape each night. Pangia technologies is managing the backup process. There are currently over 16 GB of free space on the G drive, and the following NT services can be running.

Alerter

Certificate Authority

Cold Fusion Application Server

Cold Fusion Executive

Cold Fusion RDS

Computer Browser

Content Index

Event

FTP Publishing Service (Port turned off by Firewall)

IIS Admin Service

License Logging Service

Message

Microsoft SMTP Service

MSDTC

MS SQLServer

NT LM Security Support Provider

PC Anywhere Host Service

Plug and Play

Protected Storage

Remote Procedure Call Service

Server

Spooler

SQL ServerAgent

TCP/IP NetBios Helper

Web Trends Scheduler

Workstation

World Wide Web Publishing Service

5 As to the switch 112 is used to connect the Firewall server 116 to the
WebServer 114. The IVR server is connected to the web server with a hub 118.

NetGear Fast Ethernet Switch

Switch

Model Number DS105

Hub

NetGear 10/100 Autosensing

Model Number DS104

10 Each of the servers and related equipment can be protected from power
inconsistencies and outages by UPS systems. The WebServer 114 is connected to a stand-
alone SmartUPS 700 made by APC: Model Number: SU700NET. The firewall server 116 is
connected to a stand-alone SmartUPS 700 made by APC: Model Number: SU700NET.

Entity Summary Report

Entity Name	Entity Type	Primary Keys	# Attr
Bank	Independent	BankId	
CCA	Independent	CCAIId	
CDATA	Independent		
CGLOBAL	Independent		
IVR_Table	Independent	call_record_index	
Member	Independent	MemberId	
role	Independent	RoleID	
State	Independent	StateCd	
TestANI	Independent	TestANITx	
Tmplt	Independent	TmpltId	

TmplText	Independent	TmplTextId
userrole	Independent	UserRoleId
users	Independent	
		UserId

Bank

Entity Name Bank

Primary Keys BankId

5 **Definition** The Bank table contains all information specific to a bank/referrer. There are two types of "bank" entries to be found here. These have been designated as a "main office", or a "branch". If a user is assigned to a main office they may also be given access to see all subordinate "branch" office data.

Notes

10 **Attributes**

Attribute/Role Name	Domai n	Datatype	Nul I	Definition
BankId/		INTEGER	ID	auto-generated number to used as the primary key of the table.
BankParentId/		INTEGER	Y	The BankId of the parent (main office) bank entry in this table.
DNIS/		VARCHAR(12)	N	The DNIS (800 number) a customer uses to contact the bank. This field relates to the DNIS field in the IVR_Table.
BankNameTx/		VARCHAR(50)	N	The name of the bank.
BankAddrss1T x/		VARCHAR(50)	Y	The address (line 1) of the bank.
BankAddrss2T		VARCHAR(50)	Y	The address (line 2) of the bank

[illegible]38

BankParentIn/	BIT	N	Indicates if the bank is a "main office" entry.
---------------	-----	---	---

BankCreateDt/	DATETIME	Y	Date record was created.
---------------	----------	---	--------------------------

BankModifyDt/	DATETIME	Y	Date Record was last updated. This is set via an updatea table trigger.
---------------	----------	---	--

BankChangeT	VARCHAR(75)	Y	The user id of the person to
-------------	-------------	---	------------------------------

X

last create or modify the record. The SQL Server login is used as the default (via an update table trigger) if no application specific id was given.

BankId

5	Attribute Name	BankId	Entity Name	Bank
---	----------------	--------	-------------	------

Primary Key YES

Foreign Key NO **Parent Entity**

Definition

10 auto-generated number to used as the primary key of the table.

BankParentId

Attribute Name	BankParentId	Entity Name	Bank
-----------------------	--------------	--------------------	------

Primary Key NO

Foreign Key NO **Parent Entity**

15 **Definition**

The BankId of the parent (main office) bank entry in this table.

DNIS

20	Attribute Name	DNIS	Entity Name	Bank
----	----------------	------	-------------	------

Primary Key NO

Foreign Key NO ' Parent Entity

Definition

The DNIS (800 number) a customer uses to contact the bank. This field relates to the DNIS field in the IVR_Table.

5 BankNameTx

Attribute Name BankNameTx **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

10

The name of the bank.

BankAddrss1Tx

Attribute Name BankAddrss1Tx **Entity Name** Bank

15 **Primary Key** NO

Foreign Key NO **Parent Entity**

Definition

The address (line 1) of the bank.

20

BankAddrss2Tx

Attribute Name BankAddrss2Tx **Entity Name** Bank

Primary Key NO

25 **Foreign Key** NO **Parent Entity**

Definition

The address (line 2) of the bank

BankCityTx

30 **Attribute Name** BankCityTx **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

The city in which the bank is located.

StateCd

5 **Attribute Name** StateCd **Entity Name** Bank

Primary Key NO

Foreign Key YES **Parent Entity** State

Definition

10 The state in which the bank is located.

BankZipTx

Attribute Name BankZipTx **Entity Name** Bank

Primary Key NO

15 **Foreign Key** NO **Parent Entity**

Definition

The zip code in which the bank is located

20 BankPhoneTx

Attribute Name BankPhoneTx **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

25

The phone number of the bank. Possibly a contact number for someone at the bank.

BankFaxPhoneTx

Attribute Name BankFaxPhoneTx **Entity Name** Bank

Primary Key NO

30 **Foreign Key** NO **Parent Entity**

Definition

The fax number for the bank.

BankWebSiteURLTx

Attribute Name BankWebSiteURLTx **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

The URL of the banks website (if any)

BankInuseIn

Attribute Name BankInuseIn **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

Indicates if the bank is "inuse" in the site. This field is used to "turn off" banks without having to delete them from the system.

BankDptTx

Attribute Name BankDptTx **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

The department of the bank branch. The department indicates the level of late accounts the particular bank branch deals with. The department designations are: 30 day, 60 day, 90 day, 120 day, Charge Off.

BankParentIn

Attribute Name BankParentIn **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

Indicates if the bank is a "main office" entry.

5 **BankCreateDt**

Attribute Name BankCreateDt **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

10

Date record was created.

BankModifyDt

Attribute Name BankModifyDt **Entity Name** Bank

Primary Key NO

15 **Foreign Key** NO **Parent Entity**

Definition

Date Record was last updated. This is set via an updatea table trigger.

BankChangeTx

20 **Attribute Name** BankChangeTx **Entity Name** Bank

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

25 The user id of the person to last create or modify the record. The SQL Server login is used as the default (via an update table trigger) if no application specific id was given.

CCA

Entity Name CCA

30 **Primary Keys** CCAId

Definition The CCA table contains all information specific to CCA's/Receiver's.

Notes

Attributes

Attribute/Role Name	Domain	Datatype	Null	Definition
CCAIId/		INTEGER	ID	auto-generated number used as the primary key of the table.
CCANameTx/		VARCHAR(50)	Y	Name of the CCA/Receiver.
CCAAAddrss1Tx/		VARCHAR(50)	Y	First address line of the CCA
CCAAAddrss2Tx/		VARCHAR(50)	Y	Second address line of the CCA.
CCACityTx/		VARCHAR(50)	Y	City in which the CCA is located.
StateCd/ StateCd		VARCHAR(2)	Y	State in which the CCA is located.
CCAZipTx/		VARCHAR(12)	Y	The zip code in which the CCA is located.
CCAPhoneTx/		VARCHAR(12)	Y	A phone number for the CCA, possibly a specific contact within the company.
CCAFaxPhoneT x/		VARCHAR(12)	Y	The fax number for the CCA
CCAWebSiteU RLTx/		VARCHAR(80)	Y	The URL of the CCA's web site (if any)
CCABillCntctId/		VARCHAR(12)	Y	****Unknown****, this field was included in the table layout provided but not

VARCHAR(12) Y

x/

currently in use.

The phone number used by IVR routing system to connect customers with the CCA. This field directly ties back to the outbound_number fields (0,1,2) in the IVR_Table.

CCAlnuseIn/

BIT N

Indicates if the CCA is "inuse" in the system. This field is used to "turn off" a CCA without removing the record from the database.

CCATypeTx/

VARCHAR(20) Y

The type/level of service provided by the CCA.

Current valid values are:

Walk In, Phone Only, Both.

CCAAffltn/

VARCHAR(10) Y

The affiliation membership of the CCA. Current valid values are: AICCCA, NFCC, None.

CCACre

DATETIME Y

Date the record was created.

a

t

e

D

v

CCAModifyDt/

DATETIME Y

Date the record was last

VARCHAR(75) Y

CCACHa

n

g

e

T

x

/

modified. (set via an

update table trigger)

User id that last created or

modified the record. By

default the SQL Server

login is used if no

application specific user id

was given.

CCAIId

Attribute Name CCAId **Entity Name** CCA

Primary Key YES

Foreign Key NO **Parent Entity**

Definition

auto-generated number used as the primary key of the table.

CCANameTx

Attribute Name CCANameTx **Entity Name** CCA

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

Name of the CCA/Receiver.

CCAAddrss1Tx

Attribute Name CCAAddrss1Tx **Entity Name** CCA

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

First address line of the CCA

Foreign Key NO Parent Entity

Definition

A phone number for the CCA, possibly a specific contact within the company.

CCAFaxPhoneTx

Attribute Name CCAFaxPhoneTx **Entity Name** CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

The fax number for the CCA

CCAWebSiteURLTx

Attribute Name CCAWebSiteURLTx **Entity Name** CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

The URL of the CCA's web site (if any)

CCABillCntctId

Attribute Name CCABillCntctId **Entity Name** CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

****Unknown****, this field was included in the table layout provided but not currently in use.

CCAIVRPhoneTx

Attribute Name CCAIVRPhoneTx **Entity Name** CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

The phone number used by IVR routing system to connect customers with the CCA. This field directly ties back to the outbound_number fields (0,1,2) in the IVR_Table.

CCAIInuseIn

Attribute Name CCAInuseIn Entity Name CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

Indicates if the CCA is "inuse" in the system. This field is used to "turn off" a CCA without removing the record from the database.

CCATypeTx

Attribute Name CCATypeTx Entity Name CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

The type/level of service provided by the CCA. Current valid values are: Walk In, Phone Only, Both.

CCAAffltn

Attribute Name CCAAffltn Entity Name CCA

Primary Key NO

Foreign Key NO Parent Entity

Definition

The affiliation membership of the CCA. Current valid values are: AICCCA, NFCC, None.

CCACreateDt

Attribute Name CCACreateDt **Entity Name** CCA

Primary Key NO

5 **Foreign Key** NO **Parent Entity**

Definition

Date the record was created.

CCAModifyDt

10 **Attribute Name** CCAModifyDt **Entity Name** CCA

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

15 Date the record was last modified. (set via an update table trigger)

CCACHangeTx

Attribute Name CCACHangeTx **Entity Name** CCA

Primary Key NO

20 **Foreign Key** NO **Parent Entity**

Definition

User id that last created or modified the record. By default the SQL Server login is used if no application specific user id was given.

25

CDA

Entity Name CDA

Primary Keys

Definition Internal Coldfusion table used to track users and associated system variables.

30

Notes

Attributes

Attribute/Role Name	Domain	Datatype	Null	Definition
---------------------	--------	----------	------	------------

cfid/	CHAR(20)	Y
-------	----------	---

5	app/	CHAR(64)	Y
---	------	----------	---

data/	LONG VARCHAR	Y
-------	--------------	---

cfid

Attribute Name	cfid	Entity Name	CDATA
-----------------------	------	--------------------	-------

10	Primary Key NO
----	-----------------------

Foreign Key NO **Parent Entity**

Definition

15	app
----	-----

Attribute Name	app	Entity Name	CDATA
----------------	-----	-------------	-------

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

20

data

Attribute Name	data	Entity Name	CDATA
-----------------------	------	--------------------	-------

Primary Key NO

25	Foreign Key	NO	Parent Entity
----	-------------	----	---------------

Definition

CGLOBAL

30 Entity Name CGLOBAL

Primary Keys

Definition Internal Coldfusion table used to track users and associated system variables.

Attributes

cfid/	CHAR(20)	Y
data/	LONG VARCHAR	Y
lvisit/	DATETIME	Y

cfid

Primary Key NO

15

Definition

Attribute Name	data	Entity Name	CGLOBAL
----------------	------	-------------	---------

Foreign Key NO **Parent Entity**

Definition

lvisit

Primary Key NO

Definition

52

IVR_Table

Entity Name IVR_Table

Primary Keys call_record_index

Definition The IVR_table contains transaction records from the IVR system. It is used as the core table for all reporting done in the web site. This table is "replicated" from the IVR system and is essentially "read only" in our site.

Notes

Attributes

Attribute/Role Name	Domain	Datatype	Null	Definition
call_record_index/		NUMERIC(18, 0)	ID	Automatically increments by one - used to uniquely identify each call into the IVR system.
ani/		VARCHAR(12)	Y	this represents the ani digits we received.
ani_info_areacode/		INTEGER	Y	this is the area code part of the received ani
ani_info_phone_number/		VARCHAR(12)	Y	this is the number part of the received ani
StateCd/ StateCd		VARCHAR(2)	Y	this is the state identifier which was determined by the IVR system (always has a value)
call_completed_flag/		INTEGER	Y	= call was completed 0 = call was not completed
credit_card_number/		VARCHAR(26)	Y	this represents the digits entered for the credit card number.
dnis/		VARCHAR(12)	Y	this represents the DNIS digits that were received.

dnis_valid/	INTEGER	Y	Y = received DNIS was found by our routing models N = received DNIS was not found by our routing models
start_datetime/	DATETIME	Y	Date and Time call was answered by the IVR System (always has a value)
end_datetime/	DATETIME	Y	Date and Time call was ended (always has a value)
call_duration/	INTEGER	Y	Number of seconds representing the duration of the call (always has a value)
exception_code0/	INTEGER	Y	Exception code for first CCA number dialed exception codes: 0 = No problems or never attempted to dial number 27 = No Dial Tone 28 = Fast Busy 29 = Busy 30 = No Answer 31 = No Ring 36 = Unknown (tbd)
exception_code1/	INTEGER	Y	Exception code for second CCA number dialed exception codes: 0 = No problems or never attempted to dial number 27 = No Dial Tone 28 = Fast Busy 29 = Busy 30 = No Answer 31 = No Ring 36 = Unknown (tbd)
exception_code2/	INTEGER	Y	Exception code for third CCA number dialed exception codes: 0 = No

first_time_caller_flag/

Y

to dial number 27 = No Dial

Tone 28 = Fast Busy 29 =

Busy 30 = No Answer 31 =

No Ring 36 = Unknown (tbd)

= this is a repeat caller 1 =

this is a first time caller 2 =

caller hung up phone before

digits entered could be

validated

outbound_number0/

VARCHAR(50)

Y

First CCA Number to try (0

indicates caller hung up

before we had a chance to

lookup the CCA numbers in

the routing tables)

outbound_number1/

VARCHAR(12)

Y

Second CCA Number to try

(this is 0 for a repeat caller,

this is also 0 when the first

CCA number is 0)

outbound_number2/

VARCHAR(12)

Y

Third CCA Number to try

(this is 0 for a repeat caller,

this is 0 when the default

routing model is the only

model accessed, this is 0

when the first CCA number

is 0)

final_called_number/

VARCHAR(12)

Y

the CCA number which was

successfully connected too

is stored here

web_upload/

INTEGER

Y

web side doesn't need to

worry about this column

this represents the ani digits we received.

ani_info_areacode

Attribute Name ani_info_areacode **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

this is the area code part of the received ani

ani_info_phone_number

Attribute Name ani_info_phone_number **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

this is the number part of the received ani

StateCd

Attribute Name StateCd **Entity Name** IVR_Table

Primary Key NO

Foreign Key YES **Parent Entity** State

Definition

this is the state identifier which was determined by the IVR system (always has a value)

call_completed_flag

Attribute Name call_completed_flag **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

= call was completed 0 = call was not completed

credit_card_number

Attribute Name credit_card_number **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

this represents the digits entered for the credit card number.

dnis

Attribute Name dnis **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

this represents the DNIS digits that were received.

dnis_valid

Attribute Name dnis_valid **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

Y = received DNIS was found by our routing models N = received DNIS was not found by our routing models

start_datetime

Attribute Name start_datetime **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

Date and Time call was answered by the IVR System (always has a value)

end_datetime

Attribute Name end_datetime **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

5 Date and Time call was ended (always has a value)

call_duration

Attribute Name call_duration **Entity Name** IVR_Table

Primary Key NO

10 **Foreign Key** NO **Parent Entity**

Definition

Number of seconds representing the duration of the call (always has a value)

15 exception_code0

Attribute Name exception_code0 **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

20

Exception code for first CCA number dialed exception codes: 0 = No problems or never attempted to dial number 27 = No Dial Tone 28 = Fast Busy 29 = Busy 30 = No Answer 31 = No Ring 36 = Unknown (tbd)

25 exception_code1

Attribute Name exception_code1 **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

30

Exception code for second CCA number dialed exception codes: 0 = No problems or never attempted to dial number 27 = No Dial Tone 28 = Fast Busy 29 = Busy 30 = No Answer 31 =

No Ring 36 = Unknown (tbd)

exception_code2

Attribute Name exception_code2 **Entity Name** IVR_Table

5 **Primary Key** NO

Foreign Key NO **Parent Entity**

Definition

10 Exception code for third CCA number dialed exception codes: 0 = No problems or never
attempted to dial number 27 = No Dial Tone 28 = Fast Busy 29 = Busy 30 = No Answer 31 =
No Ring 36 = Unknown (tbd)

first_time_caller_flag

Attribute Name first_time_caller_flag **Entity Name** IVR_Table

15 **Primary Key** NO

Foreign Key NO **Parent Entity**

Definition

20 = this is a repeat caller 1 = this is a first time caller 2 = caller hung up phone before digits
entered could be validated

outbound_number0

Attribute Name outbound_number0 **Entity Name** IVR_Table

Primary Key NO

25 **Foreign Key** NO **Parent Entity**

Definition

30 First CCA Number to try (0 indicates caller hung up before we had a chance to lookup the
CCA numbers in the routing tables)

outbound_number1

Attribute Name outbound_number1 **Entity Name** IVR_Table

006377 2696950

hold_datetime

Attribute Name hold_datetime **Entity Name** IVR_Table

Primary Key NO

5 **Foreign Key** NO **Parent Entity**

Definition

Date and Time of when caller was put on HOLD, blank if call was terminated before caller was put on hold.

10

connect_datetime

Attribute Name connect_datetime **Entity Name** IVR_Table

Primary Key NO

Foreign Key NO **Parent Entity**

15

Definition

Date and Time of when caller was connected to CCA, blank if call was terminated before caller was connected.

20 **Member**

Entity Name Member

Primary Keys MemberId

Definition The Member table will hold all information specific to a user that requires access to the Members area of the site.

25

Notes

Attributes

Attribute/Role	Domain	Datatype	Null	Definition
-----------------------	---------------	-----------------	-------------	-------------------

Name

MemberId/		INTEGER	ID	A auto-generated id to be
-----------	--	---------	----	---------------------------

Field Name	Field Type	Field Length	Field Description
CCAIId/ CCAId	INTEGER	Y	
UserId/ UserId	INTEGER	Y	Auto-generated id to be used as the primary key of the table.
BankId/ BankId	INTEGER	Y	
MemberFirstNameTx/	VARCHAR(50)	Y	The first name of the user.
MemberLastNameTx/	VARCHAR(50)	Y	The last name of the user
MemberPhoneTx/	VARCHAR(12)	Y	The phone number of the user
MemberFaxPhoneTx/	VARCHAR(50)	Y	The fax number of the user
MemberEmailAddressTx/	VARCHAR(50)	Y	The email address of the user
MemberInuseIn/	BIT	N	Indicates if the member is currently "active" in the site. This is field is used to turn off access to a user without actually deleting there record from the database. 0 = turned off, 1 = turned on.
MemberTitleTx/	VARCHAR(25)	Y	The title, if any, of the user. I.E. Vice President, or VP accounting dpt.
MemberCreatedDt/	DATETIME	Y	Date the record was created.
MemberModifyDt/	DATETIME	Y	Date record was last modified. This is set via an update table trigger.

MemberChangeTx/

VARCHAR(75) Y

User Id that last created or updated the record. This could be set as either an application specific userid during an SQL update statement or a SQL Server login id via an update table trigger as the default.

MemberId

Attribute Name MemberId **Entity Name** Member

Primary Key YES

5 **Foreign Key** NO **Parent Entity**

Definition

A auto-generated id to be used as the primary key of the table.

10 CCAId

Attribute Name CCAId **Entity Name** Member

Primary Key NO

Foreign Key YES **Parent Entity** CCA

Definition

15

UserId

Attribute Name UserId **Entity Name** Member

Primary Key NO

Foreign Key YES **Parent Entity** users

20 **Definition**

Auto-generated id to be used as the primary key of the table.

5

Definition

10

Definition

15

Definition

25

30

65

Foreign Key NO Parent Entity

Definition

The fax number of the user

MemberEmailAddrssTx

Attribute Name MemberEmailAddrssTx **Entity Name** Member

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

The email address of the user

MemberInuseIn

Attribute Name MemberInuseIn **Entity Name** Member

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

Indicates if the member is currently "active" in the site. This is field is used to turn off access to a user without actually deleting there record from the database. 0 = turned off, 1 = turned on.

MemberTitleTx

Attribute Name MemberTitleTx **Entity Name** Member

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

The title, if any, of the user. I.E. Vice President, or VP accounting dpt.

MemberCreatedt

Attribute Name MemberCreatedt **Entity Name** Member

Primary Key NO

Foreign Key NO Parent Entity

Definition

Date the record was created.

5

MemberModifyDt

Attribute Name MemberModifyDt **Entity Name** Member

Primary Key NO

Foreign Key NO Parent Entity

10

Definition

Date record was last modified. This is set via an update table trigger.

MemberChangeTx

15

Attribute Name MemberChangeTx **Entity Name** Member

Primary Key NO

Foreign Key NO Parent Entity

Definition

20

User Id that last created or updated the record. This could be set as either an application specific userid during an SQL update statement or a SQL Server login id via an update table trigger as the default.

role

Entity Name role

25

Primary Keys RoleID

Definition The role table contains the distinct types of access defined in the site. I.E. Bank's, CCA's, SuperAdmin, SiteAdmin etc.

Notes

Attributes

30

Attribute/Role	Domain	Datatype	Null	Definition
----------------	--------	----------	------	------------

Name

RoleID/	INTEGER	ID	Auto-generated number used as the primary key of the table.
RoleNameTX/	VARCHAR(150)	Y	Name for the access type (role). I.E. Bank, CCA, Admin
RoleDescTX/	LONG VARCHAR	Y	A description of the purpose and/or access level the role confers to the user.
RoleCreateDT/	DATETIME	Y	Date the role was created
RoleModifyDT/	DATETIME	Y	Date the role was updated.
RoleChangeTX/	VARCHAR(75)	Y	User login id (or sql login) of the account used to create or last update the role.

RoleID

Attribute Name	RoleID	Entity Name	role
----------------	--------	-------------	------

Primary Key YES

5	Foreign Key	NO	Parent Entity
---	-------------	----	---------------

Definition

Auto-generated number used as the primary key of the table.

10	RoleNameTX
----	------------

Attribute Name	RoleNameTX	Entity Name	role
----------------	------------	-------------	------

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

15

Name for the access type (role). I.E. Bank, CCA, Admin

RoleDescTX

Attribute Name RoleDescTX **Entity Name** role

Primary Key NO

5 **Foreign Key** NO **Parent Entity**

Definition

A description of the purpose and/or access level the role confers to the user.

RoleCreateDT

10 **Attribute Name** RoleCreateDT **Entity Name** role

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

15 Date the role was created

RoleModifyDT

Attribute Name RoleModifyDT **Entity Name** role

Primary Key NO

20 **Foreign Key** NO **Parent Entity**

Definition

Date the role was updated.

RoleChangeTX

25 **Attribute Name** RoleChangeTX **Entity Name** role

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

30 User login id (or sql login) of the account used to create or last update the role.

State

Entity Name State

Primary Keys StateCd

5 **Definition** The State table contains the full state name associated with the standard 2 digit state code abbreviation.

Notes

Attributes

Attribute/Role	Domain	Datatype	Null	Definition
----------------	--------	----------	------	------------

Name

StateCd/		VARCHAR(2)	N	The 2 digit state abbreviation.
----------	--	------------	---	---------------------------------

StateNameTX/		VARCHAR(50)	N	The full name of the state.
--------------	--	-------------	---	-----------------------------

10

StateCd

Attribute Name	StateCd	Entity Name	State
----------------	---------	-------------	-------

Primary Key YES

Foreign Key NO **Parent Entity**

15

Definition

The 2 digit state abbreviation.

StateNameTX

Attribute Name	StateNameTX	Entity Name	State
----------------	-------------	-------------	-------

20

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

25 The full name of the state.

TestANI

Entity Name TestANI

Primary Keys TestANITx

5 **Definition** This table contains a list of Test ANI's. The entries in this table are to be excluded from the standard web summary reports.

Notes

Attributes

10 **Attribute/Role Name Domain Datatype Null Definition**

TestANITx/ VARCHAR(12) N An ANI (Phone#).

15 TestANITx

Attribute Name TestANITx **Entity Name** TestANI

Primary Key YES

Foreign Key NO **Parent Entity**

Definition

20 An ANI (Phone#).

Tmpl

Entity Name Tmpl

25 **Primary Keys** TmplId

Definition The Tmpl table contains the names of all dynamic Coldfusion templates on the site.

Notes

Attributes

30 **Attribute/Role Domain Datatype Null Definition**

Name

TmplTid/	INTEGER	ID	Auto-generated number used as the primary key of the table.
TmplNameTx/	VARCHAR(50)	N	the actual coldfusion template name. I.E. Index.cfm
TmplDescTx/	LONG VARCHAR	Y	A description of the template. Used to help administrator recognize which template is which.
TmplInuseIn/	BIT	N	Indicates if the tmeplate is "inuse".

Tmpltd	
Attribute Name	Entity Name
Primary Key	YES
Foreign Key	NO
Parent Entity	
Definition	

Auto-generated number used as the primary key of the table.

TmpltNameTx

Attribute Name	TmpltNameTx	Entity Name	Tmplt
Primary Key	NO		
Foreign Key	NO	Parent Entity	
Definition			

the actual coldfusion template name. I.E. Index.cfm

TmpltDescTx		Entity Name		Tmplt
Attribute Name	TmpltDescTx	Entity Name	Tmplt	
Primary Key	NO			
Foreign Key	NO	Parent Entity		

Definition

A description of the template. Used to help administrator recognize which template is which.

5 TmpltnuseIn

Attribute Name TmpltnuseIn **Entity Name** Tmpltn

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

10

Indicates if the template is "inuse".

TmplText

Entity Name TmplText

15 **Primary Keys** TmplTextId

Definition The TmplText table contains all the "changeable" text parts of a Coldfusion template. There may be many text parts for a single template.

Notes

Attributes

20

Attribute/Role Name	Domain	Datatype	Null	Definition
TmplTextId/		INTEGER	ID	auto-generated number used as the primary key of the table.
TmplId/ TmplId		INTEGER	N	foreign key to the Tmpl table. Identifies the template the text is to be displayed on.
TmplTextCd/		VARCHAR(20)	N	A code which identifies the individual text parts. This code will be used inside the coldfusion

A description of the text piece to aid administrator in identifying where the text is to be displayed.

I.E. "The text blurb at the bottom of the page"

VARCHAR(500) Y

Attribute Name	TmpltTextId	Entity Name	TmpltText
----------------	-------------	-------------	-----------

Foreign Key NO **Parent Entity**

auto-generated number used as the primary key of the table.

Attribute Name	TmpltId	Entity Name	TmpltText
----------------	---------	-------------	-----------

Foreign Key YES **Parent Entity** Tmplt

foreign key to the Tmplt table. Identifies the template the text is to be displayed on.

Attribute Name	TmpltTextCd	Entity Name	TmpltText
----------------	-------------	-------------	-----------

Foreign Key NO **Parent Entity**

A code which identifies the individual text parts. This code will be used inside the coldfusion

template to place text on the page.

TmplTextDescTx

Attribute Name	TmplTextDescTx	Entity Name	TmplText
-----------------------	----------------	--------------------	----------

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

A description of the text piece to aid administrator in identifying where the text is to be displayed. I.E. "The text blurb at the bottom of the page"

userrole

Entity Name userrole

Primary KeysUserRoleID

Definition The UserRole table is a cross reference between the Users and Role tables. It is where which roles a particular user has be given is assigned.

Notes

Attributes

Attribute/Role Name	Domain	Datatype	Null	Definition
UserRoleID/		INTEGER	ID	Auto-generated number used as the primary key of the table.
UserId/ UserId		INTEGER	N	
RoleID/ RoleID		INTEGER	N	

UserRoleID

Attribute Name	UserRoleID	Entity Name	userrole
-----------------------	------------	--------------------	----------

Primary Key YES

Foreign Key NO **Parent Entity**

Definition

[illegible]

Attribute Name	UserId	Entity Name	userrole
----------------	--------	-------------	----------

Foreign Key YES **Parent Entity** users

RoleID

Primary Key NO

Definition

Entity Name users

Definition The Users table contains the user login information for a member.

20 **Attributes**

76

N

N

DATETIME

Y

Y

DATETIME

Y

Y

VARCHAR(75)

Y

Y

Attribute Name	UserId	Entity Name	users
-----------------------	---------------	--------------------	--------------

Foreign Key NO **Parent Entity**

Auto-generated id to be used as the primary key of the table.

Attribute Name	UserNameTX	Entity Name	users
-----------------------	------------	--------------------	-------

Foreign Key NO **Parent Entity**

The account login id that is unique to the site. I.E. member Eddie George might create login id EGeorge.

Attribute Name	UserPsswdTX	Entity Name	users
----------------	-------------	-------------	-------

Foreign Key NO **Parent Entity**

Definition

User specified password for the account.

5 UserInuseIN

Attribute Name UserInuseIN **Entity Name** users

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

10

Indicates if the user account in "inuse". This field is used to turn off user accounts without actually deleting the record from the database.

UserCreatedDT

15 **Attribute Name** UserCreatedDT **Entity Name** users

Primary Key NO

Foreign Key NO **Parent Entity**

Definition

20 Date the account was createed.

UserModifyDT

Attribute Name UserModifyDT **Entity Name** users

Primary Key NO

25 **Foreign Key** NO **Parent Entity**

Definition

Date the account was updated.

30 UserChangeTX

Attribute Name UserChangeTX **Entity Name** users

Primary Key NO

Foreign Key NO Parent Entity

Definition

The login id (or sql login) of the person who created or last updated the record.

- 5 While the above description contains many specificity's, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of one preferred embodiment thereof. Many other variations are possible such as, but not limited to, those described in the Objects and Advantages section above. Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the principal embodiment and other examples described above.